

11 December 2019 – New Metals Conference Presentation
Presented by Andrew Penkethman

Disclaimer

Important notice

This presentation contains general information only and is, or is based upon, information which has been released to ASX or is contained in the Ardea Resources Limited (Ardea or the Company) prospectus dated 9 November 2016 (including supplementary prospectuses dated 18 November 2016 and 6 January 2017), the Goongarrie Nickel Cobalt Project Pre-Feasibility Study (dated 28 March 2018) the Goongarrie Expansion Study (24 July 2018), Goongarrie Pilot Plant trial produces battery grade crystals (31 October 2018), Lewis Ponds met testwork produces high grade concentrates (26 November 2018), Goongarrie Nickel Cobalt Project Update (8 April 2019), Drilling at Gale identifies large scale gold system (11 April 2019), Ardea advances NSW Gold and Base Metals IPO (29 April 2019), Ardea Quarterly Operations Report, for the quarter ended 31 March 2019 (30 April 2019), Ardea Quarterly Operations Report, for the quarter ended 30 June 2019 (22 July 2019), Nickel sulphide exploration commences at Perrinvale Project (24 July 2019), Ardea Quarterly Operations Report, for the quarter ended 30 September 2019 (31 October 2019), Godolphin Resources Prospectus (29 October 2019), Godolphin Resources IPO to close early (19 November 2019) and Mulga Plum Exploration Update (25 November 2019). This presentation is not an invitation, offer or recommendation (express or implied) to subscribe for, or apply for the purchase of, or to take any other action in respect of securities of any entity described herein and is not a prospectus, product disclosure statement or disclosure document for the purposes of the Corporations Act 2001 (Cth) and has not been lodged with ASIC. None of Ardea Resources Limited (Ardea or the Company) or its representatives are providing or offering investment advice or services by making this presentation.

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This presentation contains forward-looking statements regarding the Company's resources, intentions and future business. These statements reflect current information, expectations, intentions and strategies regarding the future, and are subject to certain risks and uncertainties. Should one or more of these risks or uncertainties materialise, or should any of the underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this presentation. Investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date they are made. Other than where required by law, the Company is under no obligation to revise any forward looking statement to reflect events or circumstances after the date of this presentation or to reflect the occurrence of unanticipated events.

The Goongarrie Project has completed the Pre-Feasibility Study phase and has commenced programs that are part of the Definitive Feasibility Study. Though reasonable care has been taken to ensure that the facts are accurate and/or that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results and developments of projects and the market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. A key conclusion of the Pre-Feasibility Study and Expansion Study, which is based on forward looking statements, is that the Goongarrie Project is considered to have positive economic potential.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.



Corporate Snapshot

Capital Structure, as at 6 December 2019						
Shares on Issue	117,300,435					
Share Price	\$0.60					
52 week high / low	\$0.80 / \$0.355					
Cash (as at 31 October 2019)	\$11 million					
Market Capitalisation	\$70 million					
Staff performance rights	6,161,000					

Major Shareholders						
Ian Buchhorn and associates	10.67%					
Brian O'Shannassy and associates	7.89%					
Institutional holdings	6.20%					
Top 20 shareholders	54.58%					

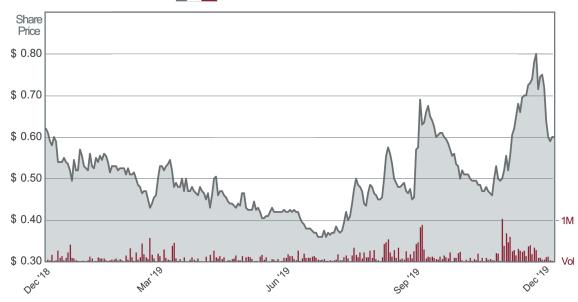
Board and Executive Management Team						
Katina Law	Executive Chair					
Ian Buchhorn	Executive Director					
Wayne Bramwell	Non-Executive Director					
Andrew Penkethman	Chief Executive Officer					
Sam Middlemas	Company Secretary and Chief Financial Officer					
Dr Matt Painter	GM - Exploration					

Experienced & dedicated management team with global experience in the resources sector, from corporate fundraising, exploration, discovery, feasibility studies, development and operations.

Ardea has a quality project portfolio and the team to make their projects succeed.



Share Price Performance

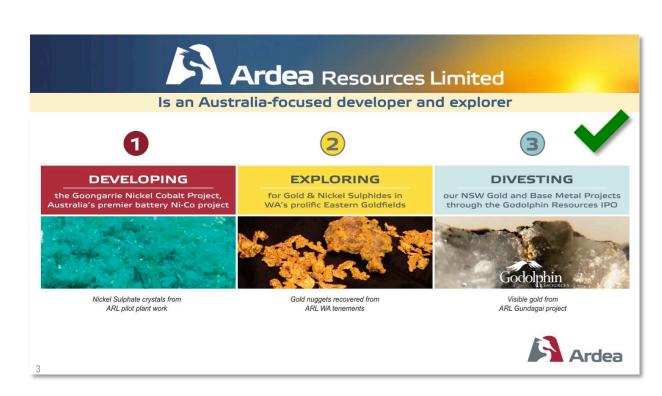


Share price performance and volume 6 December 2018 to 6 December 2019





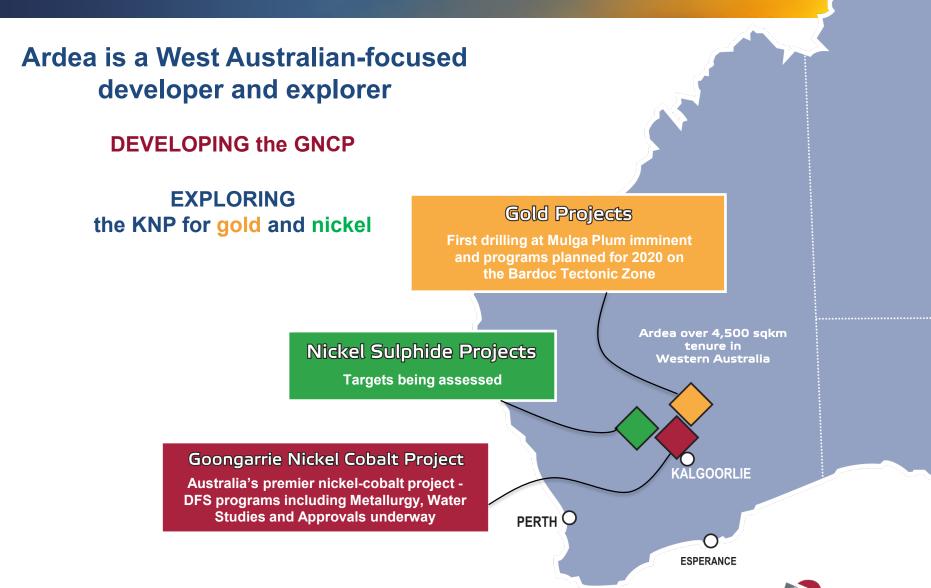
- □ Ardea is a well funded
 West Australian
 -focused developer
 and explorer
 with a clear strategy
- ☐ Godolphin IPO executed as foreshadowed, >\$7M raised
- □ From 2020, the three pronged strategy reverts back to the core West Australian Kalgoorlie Nickel Project (KNP) tenements

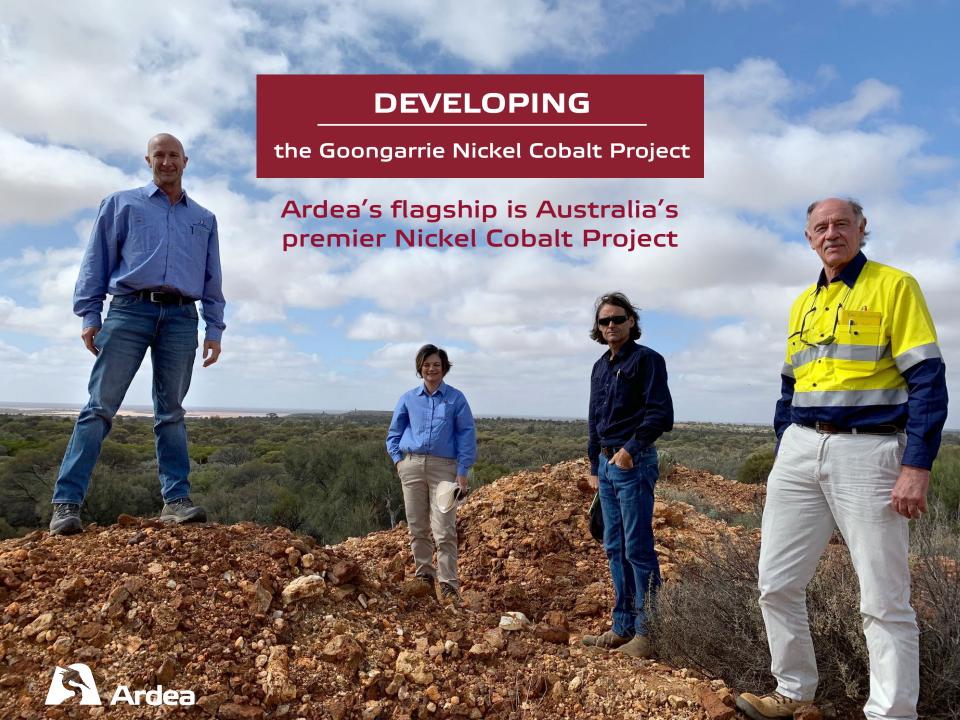


Company slide presentation from mid 2019.



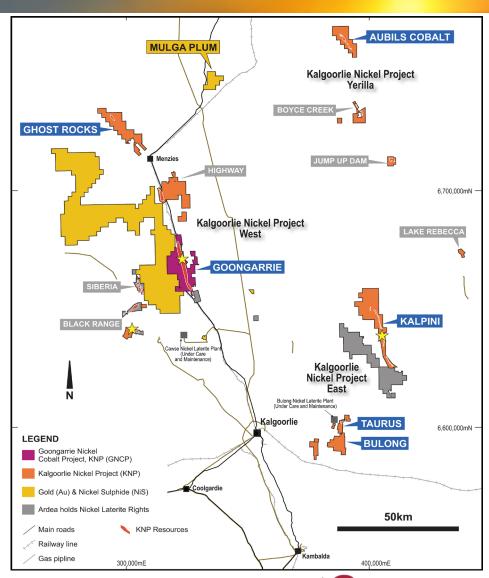
Ardea Project Portfolio





The Kalgoorlie Nickel Project

- Kalgoorlie Nickel Project (KNP) has a globally significant nickel and cobalt resource of 773Mt at 0.7% Ni and 0.05% Co*
 - 5.6 million tonnes contained Nickel
 - 405,000 tonnes contained Cobalt
- The Goongarrie Nickel Cobalt Project (GNCP) is part of the broader KNP, with a resource of 216Mt at 0.71% Ni and 0.06% Co*
 - 1.5 million tonnes contained Nickel.
 - 130,700 tonnes contained Cobalt
 - Potential to produce Nickel and Cobalt Sulphate or Mixed Sulphide or Hydroxide Product
- Ability to produce ethical supply from Australia's premier mining jurisdiction
- All project designs are focused on minimising footprint and operating to environmental best practice
- Potential for multiple processing hubs and multi-decade mine life
- Leverage off infrastructure rich location and skilled work force





 ^{*} See Appendix for resource breakdown.

^{2.} Per Goongarrie Expansion Study ASX release, 24 July 2018. All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.

Legend - Railway Comet Vale Power lines Highway □ Gold mines & occurrences BTZ shear loci Ni-Co deposits ARL tenure LIVE, EXPLORATION LICENCE LIVE, MINING LEASE LIVE. PROSPECTING PENDING EXPLORATION PENDING, MINING LEASE PENDING, PROSPECTING LICENCE +20km Goongarrie Nickel Cobalt Project, part of the KNI Lake Goongarrie Goongarrie

Goongarrie Nickel-Cobalt Project

The GNCP is part of the largest Nickel Cobalt Resource in the developed world[^]

- Potential multi-decade producer of high-quality nickel and cobalt
- 100% nickel and cobalt offtake available
- 1.0Mtpa base case PFS low CAPEX start-up with robust project economics*
- 2.25Mtpa expanded case compelling project economics*
- Low technical risk project to provide nickel and cobalt for the growing battery market
- DFS programs underway
- Strategic partner process current Ardea won't be rushed, the Company has specific funding requirements to ensure the best outcome for shareholders
- Strong interest as concerns rise around secure, ethical, long-term supply of battery grade nickel and cobalt

Refer to ASX releases: Ardea Resources Annual Report 2017. *Goongarrie Nickel Cobalt Project, PFS study, 28 March 2018 & Goongarrie Expansion Study, 24 July 2018. All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.



GCNP Advances in 2019 - Approvals



- Community consultation current with GNCP embraced
- Reports finalised and ready for statutory approvals submission when the decision is made
- Water sampling completed, focussed on pitdewater sources
 - moderate salinity borefields identified at Scotia Dam/Big Four along west contact of the ore zone, suitable for Reverse Osmosis feedstock
 - Bench-scale nanofiltration applicable for water softening
- Ecology for Lake Goongarrie pending, absence of suitable inundation event
- Evaluation of Papertalk West hydrology underway



Ardea Chair, Katina Law, inspecting a recently installed EV charging station outside the City of Kalgoorlie Boulder Council office during a 2019 stake holder update meeting.

GNCP Advances in 2019 - Approvals

Activities undertaken to minimise project footprint:

- Back filling of open pits with slurry tailings
- Sourcing neutraliser from open pit mining
- Sourcing process water from pit dewatering
- Extensive Flora and Fauna surveys undertaken across the project area

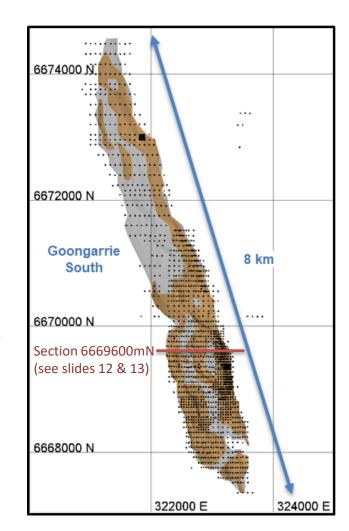


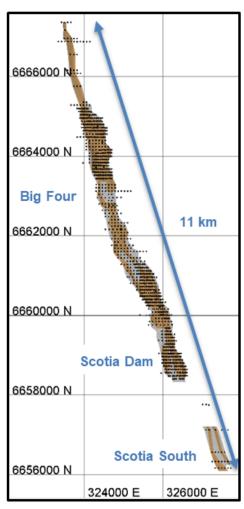




GNCP Advances in 2019 - Materials

- Block modelling completed
 - 2018 resource estimates confirmed
 - Waste and Geomet material types further defined
 - Predominately free-dig with minor
 D&B in known hard zones (caprock and ferricrete)
 - Scandium estimated in new block models
- Mine scheduling completed
 - Grades >1.1% Ni & 0.1% Co during Payback Period
 - Backfill pit voids with tails rather than above ground TSF (minimises project footprint)
 - Void capacity accommodates tailings production
- High grade mill feed identified at Highway,
 Siberia and Black Range to maintain LOM
 GNCP leach feed grades >1% Ni
- Neutraliser to be surface calcrete recovered during overburden mining
 - Bench-scale neutralisation effective
 - Opex saving on neutraliser imports

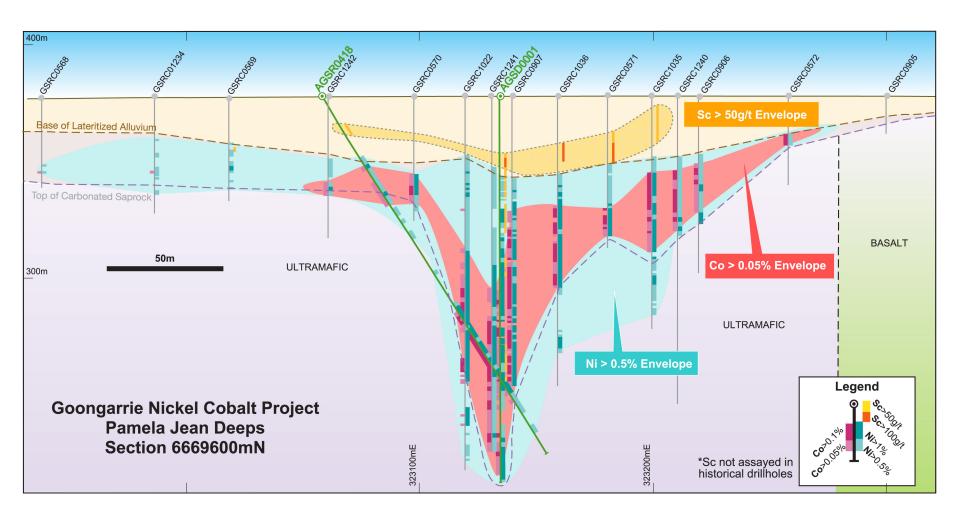




Ardea ASX releases, Quarterly Operations Report, for the quarter ended 30 June 2019 (22 July 2019), Quarterly Operations Report, for the quarter ended 30 September 2019 (31 October 2019).

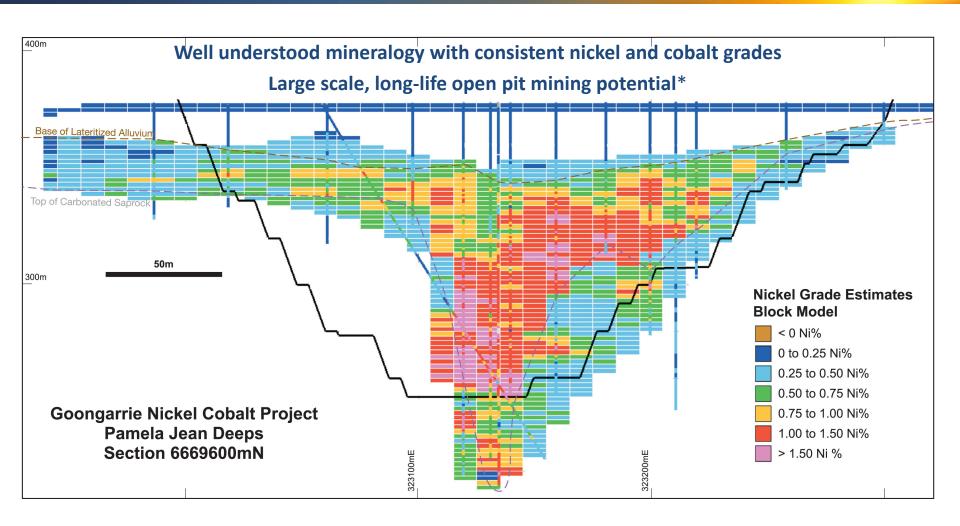


Thick, high-grade, single ore type, low strip ratio





Nickel Block Model - Cross Section 6669600mN



Refer to Ardea ASX releases: *Goongarrie Nickel Cobalt Project, PFS study, 28 March 2018, Goongarrie Expansion Study, 24 July 2018, and Quarterly Operations Report, for the quarter ended 30 June 2019 (22 July 2019). All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.



GNCP Material Source, Type and Quality

The high quality of Goongarrie ore is the key to project success:

- Controls on mineralisation are well understood by applying Ardea's quality geomet analysis
- Ardea piloting studies have confirmed on specification nickel & cobalt sulphate
- Scandium credit potential
- Ore mainly goethitic (>40% Fe & preferred plant feed)
- No smectite clays (unlike many other laterite deposits, so no drying required before ore processed)
- Highly soluble in PAL, low acid consumption, excellent rheology, pulp density (expected lower Capex and Opex compared to peers)
- No screen upgrade required, eliminates ore preparation risk (commonly a stumbling block for non-goethitic deposits)
- Neutraliser recovered during mining provides a cost-effective alternative to importing limestone

PAL plant, not an asset of Ardea's.





World-Class Mining Standards, Location & Infrastructure



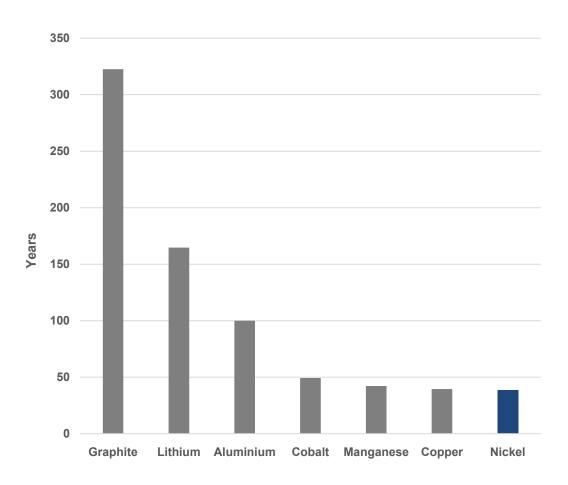


Street views of the of City of Kalgoorlie-Boulder celebrating the contributions the WA resources sector makes to the local and national economies & quality of life.

- Kalgoorlie, Western Australia offers world-class infrastructure in an established mining district
 - Over 125 years of mining in the region
 - Nil sovereign risk, very strong Local Government support
 - Goongarrie only 80 km north on the main Goldfields
 Highway
 - Railway line, power line, optic fibre cross
 Goongarrie tenements, mobile phone coverage
 - Gas pipeline adjacent to east
 - Rail access to ports of Kwinana and Esperance
- Western Australia's safety, health and environmental standards are world's best practice
- An Australian source for battery metals removes supply line concerns
- Goongarrie offers an ethical, secure, long-life source of nickel and cobalt



The Nickel Market – Reserve Life of Major Battery Minerals



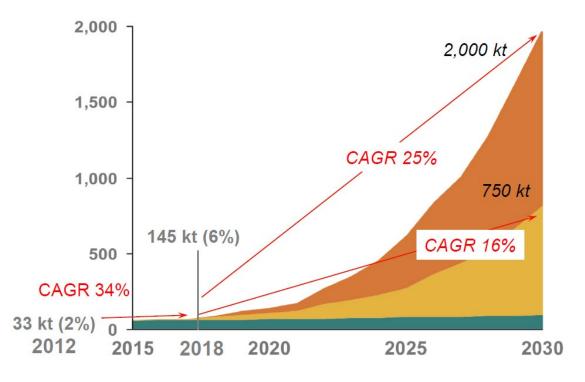
- High levels of most battery minerals but not nickel
- Declining nickel reserves
- Future nickel production not expected to keep up with growing demand, driven mainly by the battery sector.
- Not a matter of if, but when!
- Nickel supplies most critical of all battery minerals
- Particularly in light of most recent
 811 battery chemistry (8 parts Ni :
 1 part Mn : 1 part Co)

Source: USGS after JF Bertincourt, Terra Studio, What is the investment thesis for Nickel presentation, June 2019.



Projected Nickel Demand from Energy Revolution

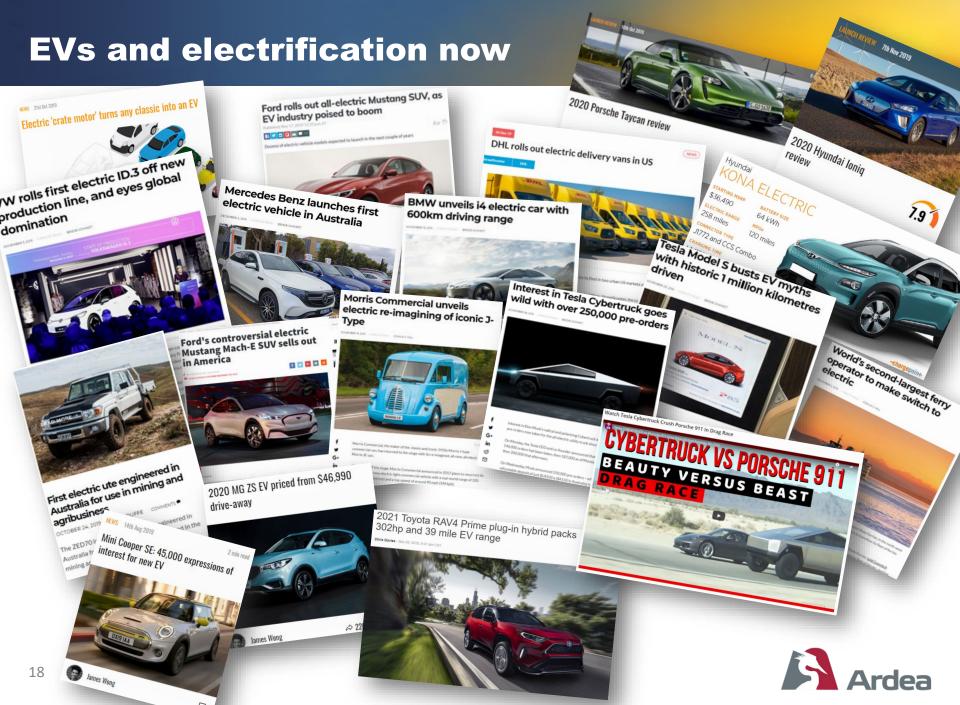
- Nickel in non-EV batteries
- Nickel in EV's conservative scenario
- Nickel in EV's upside considering "market news"



- Current nickel market size
 ~2.5 million tonnes pa
- Depending on the scenario for the EV/SSB rate of adoption, nickel volumes to meet additional demand vary between 750,000 tonnes and 2 million tonnes pa
- Nickel demand from EV/SSB
 is expected to far exceed
 nickel production from
 existing operations in any
 scenario of EV/SSB adoption

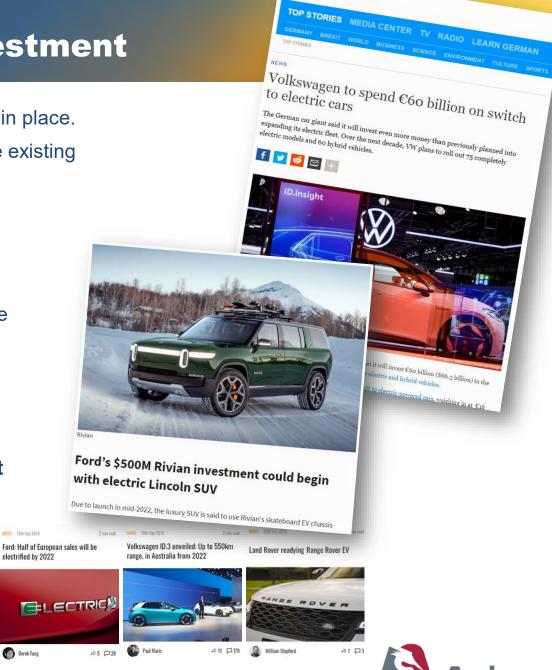
Source: After Vale/JF Bertincourt, Terra Studio, What is the investment thesis for Nickel presentation, November 2019.





Industry-wide EV investment

- All auto manufacturers have EV plans in place.
- New EV companies rising to challenge existing manufacturers.
 - Tesla (US)
 - Rivian (US)
 - BYD (China)
- Mergers of auto companies to compete for FV dominance
- China removes EV subsidies, industry sustainable.
- FV manufacturers must secure critical supplies of nickel and cobalt



Made for minds.

Potential Peugeot and Fiat merger heralds stronger electric vehicle future





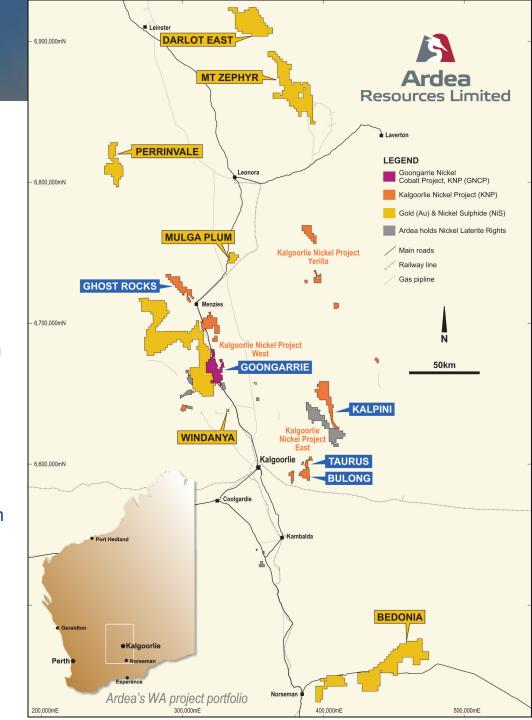


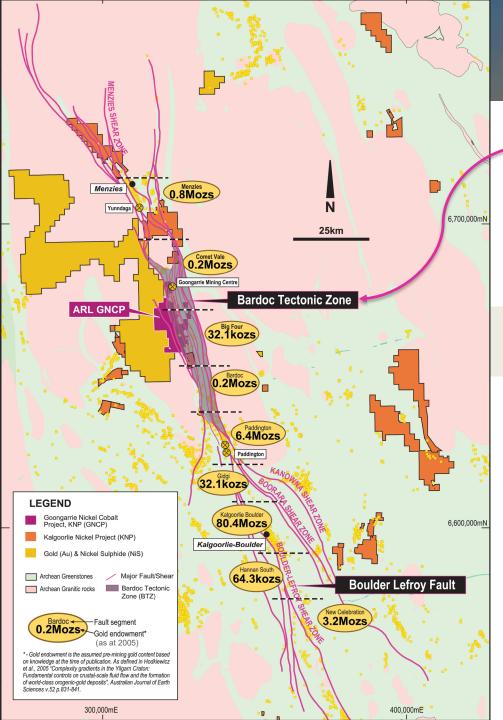




Exploration Upside

- √ >4,500km² of 100% controlled tenure in one of Australia's premier gold and nickel sulphide provinces
- Extensive tenure position provides multiple strategic options
- √ 2020 focus on core KNP projects centred on Kalgoorlie operations base
- ✓ Priority on flagship GNCP
- ✓ Undertake gold & nickel sulphide exploration with multiple targets defined





Bardoc Tectonic Zone (BTZ)

- One of the major gold-bearing structures of theWA Goldfields runs through the GNCP
 - √ ~350 km long gold-producing regional shear / fault system (~65km controlled by Ardea)
 - ✓ Hosts multiple historic gold mining centres
 - ✓ Contiguous with Boulder-Lefroy Fault (hosts Kalgoorlie & St Ives mining centres).

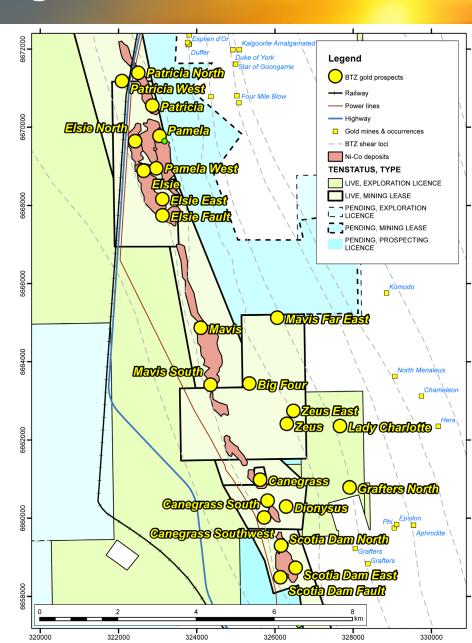
Alluvial & laterite cover has obscured the BTZ's true potential at Goongarrie

- Exploration drilling tied in with GNCP site layout sterilisation drilling
 - Multiple gold targets defined from first phase sterilisation drilling
 - ✓ Future drilling must penetrate laterite to fresh rock
 to test for gold
 - ✓ Project data refined to optimally drill Ardea BTZ gold targets
 - ✓ 2020 drilling to further test gold potential of BTZ and to tie in with site layout programs



BTZ - GNCP Site layout and gold studies

- East side of the GNCP nickel deposit is proposed area for mine waste landforms and infrastructure
- It is also a zone of extensive historic gold workings associated with the BTZ
 - Initial gold targeting completed, based on 40 years of historic hard copy data compiled into the digital data base
 - Detailed airborne magnetics acquired for structural interpretation
 - Interpretation of digital data has defined discrete structures within the BTZ that control the distribution of gold mineralisation within the GNCP
 - Follow up RC drilling targets finalised, drilling to commence Q1, 2020
- Big Four stands out as priority gold target, resource modelling current
 - BFRC021 10 metres at 8.94g/t gold from 102 metres*
 - BRFC030 24 metres at 4.58g/t gold from 61 metres*



Investment Summary



Goongarrie is Australia's premier nickel-cobalt project



Globally significant mineral resource in an **infrastructure rich and stable jurisdiction** provides ability to increase production from multiple processing hubs within the KNP



Up to 100% off-take is available, subject to financing support from Strategic Partner



Leveraged to increasing nickel and cobalt demand from the rapidly growing Electric Vehicle and Static Storage Battery markets



Ardea has an extensive (4,500km²), highly prospective landholding in the Eastern Goldfields of WA with active work programs for gold and nickel sulphides

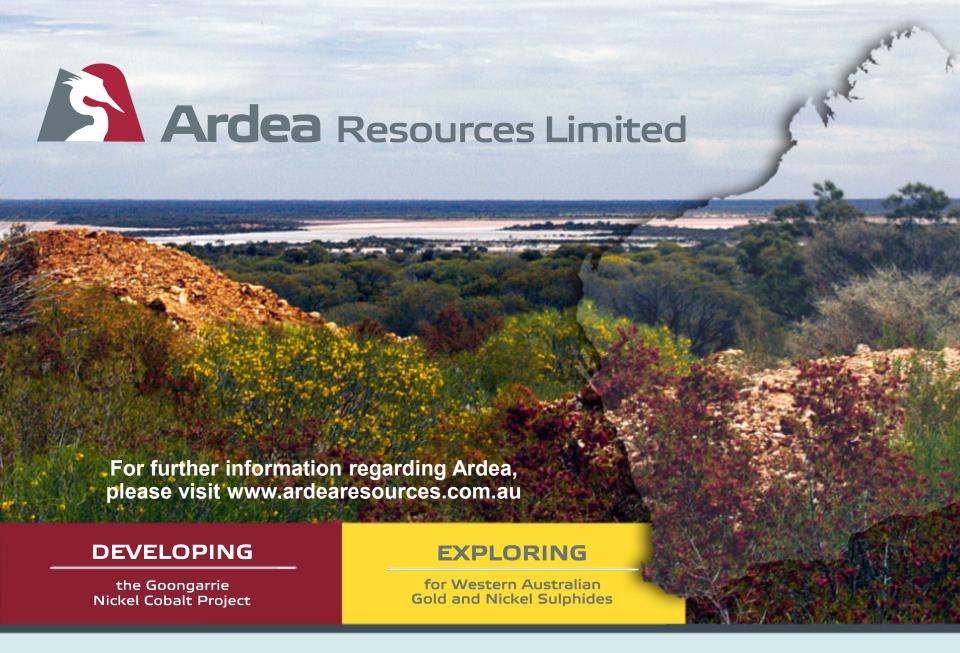


Godolphin IPO closed early with >\$7M subscribed. Team in place in Orange and raring to go!



Ardea achieves its stated objectives





APPENDICES

A High Quality Nickel and Cobalt Project

Outstanding results delivered from PFS* and Expansion Studies completed in 2018:

	1.0Mtpa	1.5Mtpa	2.25Mtpa
Status	PFS	PFS	ES
No. Trains	1	1	1
Pre Tax NPV ₈	US\$ 1.13 billion	US\$ 1.52 billion	US\$ 2.4 billion
Pre Tax IRR	29 %	29 %	31%
CAPEX	US\$ 472 million	US\$ 588 million	US\$918 million
C1 cash cost	US\$ 0.42 / lb	US\$ 0.45 / lb	US\$ (0.34) / lb
Payback	5.3 years	5.6 years	5.1 years
Cobalt sulphate	5,500tpa	6,900tpa	10,000tpa
Nickel sulphate	41,500tpa	55,300tpa	81,000tpa

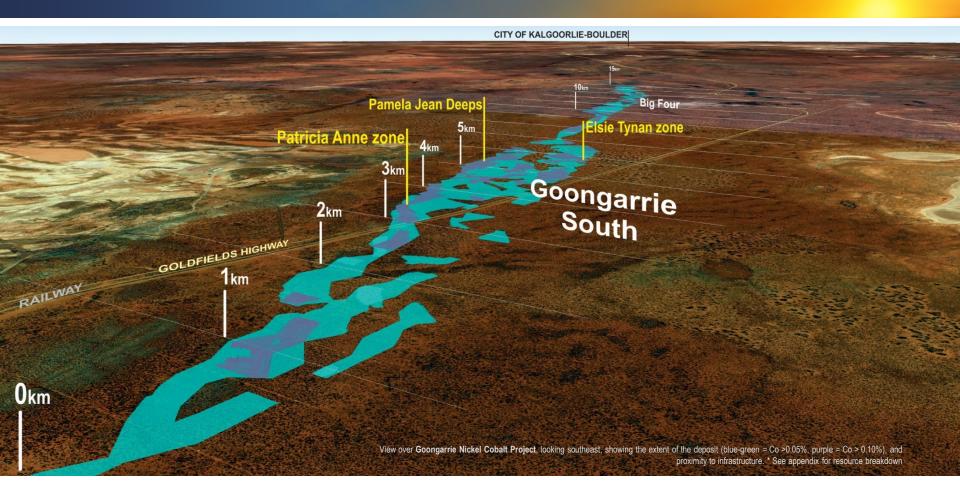
- ✓ PFS of 1Mtpa and 1.5Mtpa base case over a 25-year mine life completed
- ✓ Expansion study of 2.25Mtpa with a 25-year mine life completed
- √ 94.5% nickel and 95.5% cobalt recovery life of mine
- ✓ Pre-cobalt credit C1 costs in line with current worldwide operators
- ✓ Pressure Acid Leach (PAL) 5th generation plant is a proven design, successfully operated in other laterite projects globally
- √ 2.25Mtpa case based on only 26% of Goongarrie Resource



The information shown on this slide has been previously released on the ASX platform by Ardea in ASX releases, *Goongarrie Nickel Cobalt Project, PFS study, 28 March 2018 &

⁺Goongarrie Expansion Study, 24 July 2018. All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.

Our Flagship Goongarrie Nickel - Cobalt Project



Goongarrie JORC Resource 215.6 Mt at 0.71% nickel and 0.06% cobalt*

Reserves optimised for 25 year mine life only, less than 20% of Goongarrie resource utilised at this scale (40.1 Mt at 0.82% Nickel & 0.09% Cobalt*)



APPENDIX – Goongarrie Nickel Cobalt Project Resources

Summary of total mineral Nickel Cobalt Project area, comprising resources at Goongarrie Hill, Goongarrie South, resources within the Goongarrie Big Four, and Scotia Dam (14 March 2018).

Camp	Domains	Cut-off	Resource	Size	Cobalt	Nickel	Contair	ned metal
		%	category	(Mt)	(%)	(%)	Co (t)	Ni (t)
Goongarrie Hill Ni & Co	Ni & Co	≥ 0.5% Ni or > 0.08% Co	Inferred	52.5	0.04	0.65	21,600	340,400
			Subtotal	52.5	0.04	0.65	21,600	340,400
Goongarrie South	Ni & Co	& Co ≥ 0.5%Ni or > 0.08% Co	Measured	10.3	0.10	0.98	10,200	101,200
			Indicated	56.2	0.07	0.72	37,200	407,000
			Inferred	32.2	0.06	0.69	20,300	221,200
			Subtotal	98.7	0.07	0.74	67,700	729,300
Big Four	Ni & Co	≥ 0.5%Ni or > 0.08% Co	Indicated	45.5	0.06	0.71	28,200	320,700
•			Inferred	9.9	0.06	0.63	6,100	61,900
			Subtotal	55.4	0.06	0.69	34,300	382,700
Scotia Dam Ni & Co	Ni & Co	≥ 0.5% Ni or > 0.08% Co	Indicated	3.3	0.09	0.81	3,000	26,900
			Inferred	5.7	0.07	0.76	4,100	43,300
			Subtotal	9.0	0.08	0.78	7,100	70,200
Total	All	All > 0.5% Ni or > 0.08% Co	Measured	10.3	0.10	0.98	10,200	101,200
			Indicated	105.0	0.07	0.72	68,400	754,600
			Inferred	100.3	0.05	0.67	52,100	666,900
Goongarrie Resour	ce Global		TOTAL	215.6	0.06	0.71	130,700	1,522,700

Note: All nickel and cobalt domains are included, and are encapsulated by an envelope defined by nickel grades equal to or greater than 0.5%. Note that figures are rounded to reflect degree of certainty and may not tally.



APPENDIX – Reserves Defined for Goongarrie Nickel Cobalt Project

Goongarrie Nickel Cobalt Project, Ore Reserves based on 25 year mine life at 1.5 Mtpa.

Deposits	Class	Size	Cobalt	Nickel
		(Mt)	(%)	(%)
Goongarrie South	Proven	8.95	0.10%	0.96%
	Probable	17.26	0.09%	0.79%
	Total	26.22	0.10%	0.85%
Big Four	Proven	_		_
	Probable	13.92	0.09%	0.77%
	Total	13.92	0.09%	0.77%
TOTAL	Proven	8.95	0.10%	0.96%
	Probable	31.18	0.09%	0.78%
	Total	40.13	0.09%	0.82%

Using a nickel equivalent cut of >0.81 %, which used inputs of A\$18,900/t nickel and A\$120,750/t cobalt. (US\$15,120/t Ni and US\$96,600/t Co, 0.8 exchange rate). Nickel equivalent (Nieq %) = $Ni \ grade + \frac{Co \ grade \times Co \ price}{Ni \ price}$. Prices used are US\$15,120/t for nickel and US\$96,600/t for cobalt. No assumption about recovery is included here. Recoveries are addressed elsewhere throughout the mining schedule and financial model.

The information shown on this slide has been previously released on the ASX platform by Ardea in ASX release, Goongarrie Nickel Cobalt Project, PFS study, 28 March 2018. The information in this report that relates to Ore Reserves for the Goongarrie South and Big deposits of the Goongarrie Nickel Cobalt Project is based on information compiled by Mr Steve Lampron who is a Member of the Australasian Institute of Mining and Metallurgy and who has provided expert guidance on mine planning and Ore Reserve estimation. Mr Lampron is a director of Auralia Mining Consulting and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Lampron consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.



APPENDIX - KNP Resource Breakdown

KNP nickel-cobalt mineral resource (JORC 2012), Ardea Annual Report 2017

Resource Category	Quantity (Mt)	Cobalt (%)	Nickel (%)	Contained cobalt (t)	Contained nickel (t)
Measured	9.6	0.10	1.02	9,700	98,800
Indicated	232.9	0.06	0.75	141,200	1,759,700
Inferred	530.5	0.05	0.68	254,400	3,600,000
KNP Total Resources	773.0	0.05	0.70	405,400	5,458,400

Note: 0.5% nickel cutoff grade used to report resources. Not figures are rounded to reflect degree of certainty and may not tally.

In accordance with the Australian Securities Exchange Limited Listing Rules Appendix 5A:

The information in this report that relates to Mineral Resources for the Highway, Goongarrie Hill, Goongarrie South, Big Four, Aubils and Boyce Creek Prospects is based on information originally compiled in-house and validated by Steve Jones in 2013. Steve Jones is a member of the Australasian Institute of Mining and Metallurgy. Steve Jones is a full time employee of Heron Resources Limited and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the resource estimation activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Steve Jones consents to the inclusion in this report of the matters based on his information in the form and context that it appears. Note that Mineral Resources that are not Ore Reserves do not have demonstrated viability.

The information in this report that relates to Mineral Resources for the Siberia North, Bulong East, Siberia, Black Range, Taurus and Jump Up Dam Prospects is based on information compiled by Snowden Mining Industry Consultants by members of the Australian Institute of Mining and Metallurgy. Snowden Mining Industry Consultants had sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the resource estimation activity. All resources were internally audited by Snowden and signed off by a person of sufficient experience to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Steve Jones has validated the original resource estimates during 2013. Steve Jones consents to the inclusion in this report of the matters based on his information in the form and context that it appears. Note that Mineral Resources that are not Ore Reserves do not have demonstrated viability.

